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ACTUATOR RIGGING TEST SET ELECTROMAGNETIC INTERFERENCE
TEST (CE03)(U) ARMY MISSILE COMMAND REDSTONE ARSENAL AL
TEST AND EVALUATION D. B HOOKS APR 85

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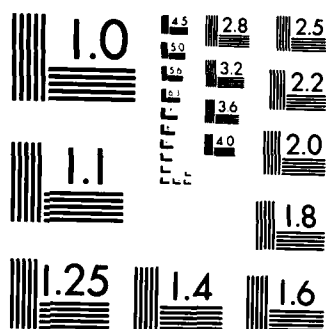
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TECHNICAL REPORT RT-85-7

ACTUATOR RIGGING TEST SET ELECTROMAGNETIC
INTERFERENCE TEST (CE03)

Birtha Hooks
Test and Evaluation Directorate
U.S. Army Missile Laboratory

APRIL 1985



U.S. ARMY MISSILE COMMAND

Redstone Arsenal, Alabama 35898-5000

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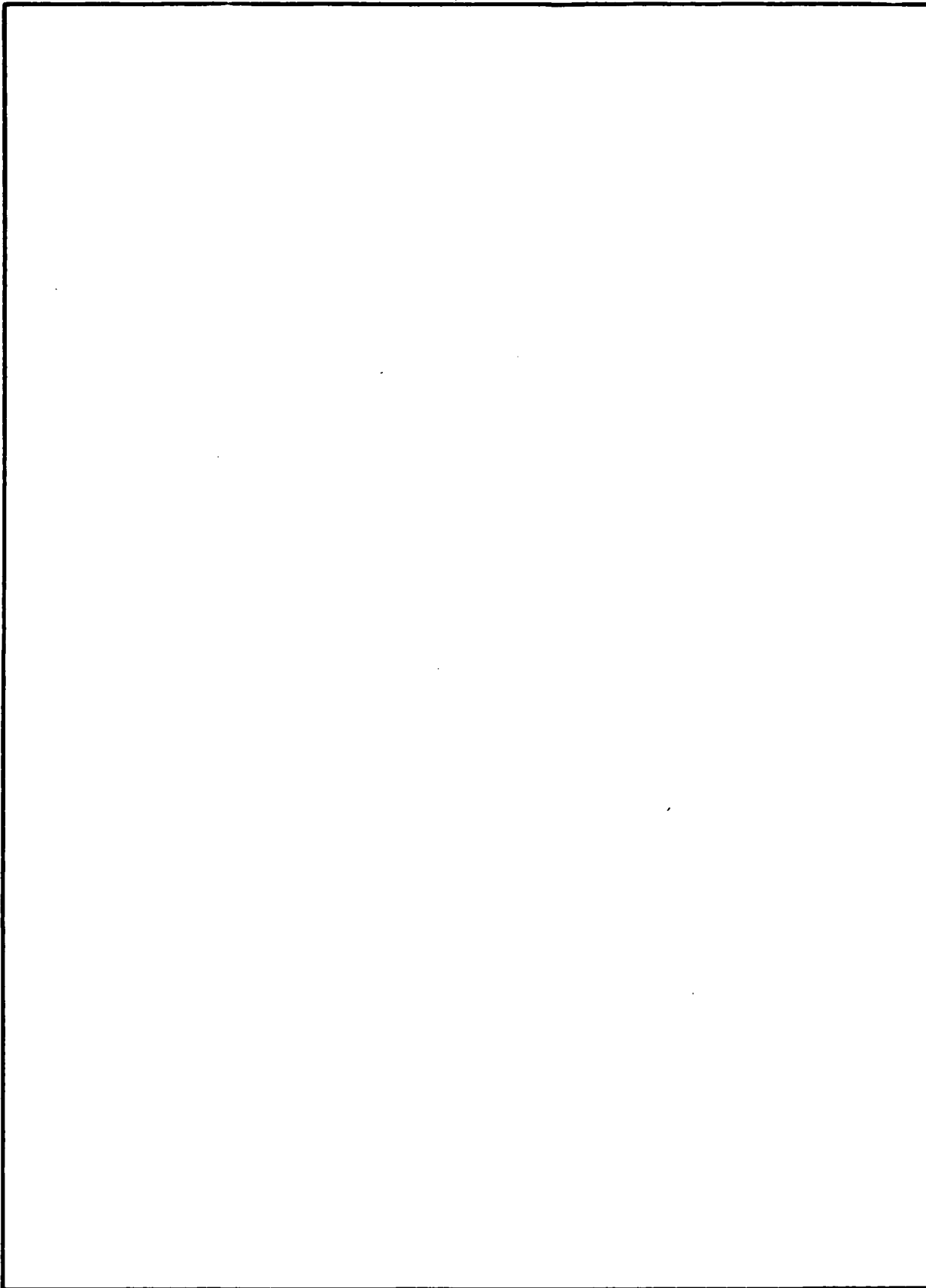
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20. ABSTRACT (Continue on reverse side if necessary and identify by block number) The results of electromagnetic interference tests to MIL-STD-461 requirements are presented for the Actuator Rigging Test Set for the B1 Bomber. Test techniques and results for procedure CE03 are presented. This test was performed for Metric Systems.		

SECURITY CLASSIFICATION OF THIS PAGE(When Data Entered)



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I. BACKGROUND

This report presents the test procedures and results of the Conducted Emissions tests performed on the Actuator Rigging Test Set, serial number 0001. These tests were conducted by the Test and Evaluation Directorate, U. S. Army Missile Command (USAMICOM), Redstone Arsenal, Alabama on November 13, 1984.

II. OBJECTIVE

The objective of this test was to determine whether the Actuator Rigging Test Set would meet the conducted emissions specification of MIL-STD 461B Part 2 for procedure CE03.

III. TEST PROCEDURES

These tests were performed by the USAMICOM, Electromagnetic and Nuclear Effects Group (AMSMI-RTS) located at building 8975, Redstone Arsenal, Alabama. They were performed using the procedures specified in MIL-STD 462 for procedure CE03.

One Actuator Rigging Test Set with a power supply and a load simulation device was used. The bonding impedance was verified to be less than the 2.5 milliohms limit set by MIL-STD 462.

List of equipment used is:

- o Hewlett Packard 8566A Spectrum Analyzer
- o Solar 6447-1 Current Probe
- o Hewlett Packard 9872A Plotter
- o Actuator Rigging Test Set
- o Loading Device
- o 400 Hz 220 V three phase power supply

CE01 - Conducted Emissions - 100 Hz to 15 KHz. The item under test was placed on the grounded plane in the shielded enclosure. The loads were connected and a current probe was placed around the appropriate line. The equipment under test was then energized and the EMI current present on the power cables in the frequency band of interest was measured using a Solar 6447-1 current probe connected to a Hewlett Packard 8566A spectrum analyzer. The data was analyzed by custom software developed by USAMICOM and recorded as a plot by a Hewlett Packard 9872A plotter. This procedure was repeated for the interconnecting leads.

IV. TEST RESULTS

CE03 - Conducted Emissions - 15 KHz to 50 MHz. The Actuator Rigging Test Set met the requirements for CE03 on both the power leads and the interconnecting leads. The results of the interconnecting leads test are shown in Figures 1 through 12, and the results of the power lead tests are shown in Figures 13 through 20.

V. CONCLUSIONS AND RECOMMENDATIONS

The unit tested met the requirements for CE03 as specified in MIL-STD 461B Part 2. No recommendations are necessary.

CONDUCTED EMISSIONS (15kHz-50MHz) NB DATA

SYSTEM NAME: ACTUATOR RIGGING TEST SET-ser# 0001
TEST DATE: 11/13/84
MICOM/DRSMI-RTS
NAME: BIRTHA HOOKS
TEST NUMBER: CE03--1
MODE: OPERATING
POLARIZATION:
TEST CONFIGURATION: SPOILER A

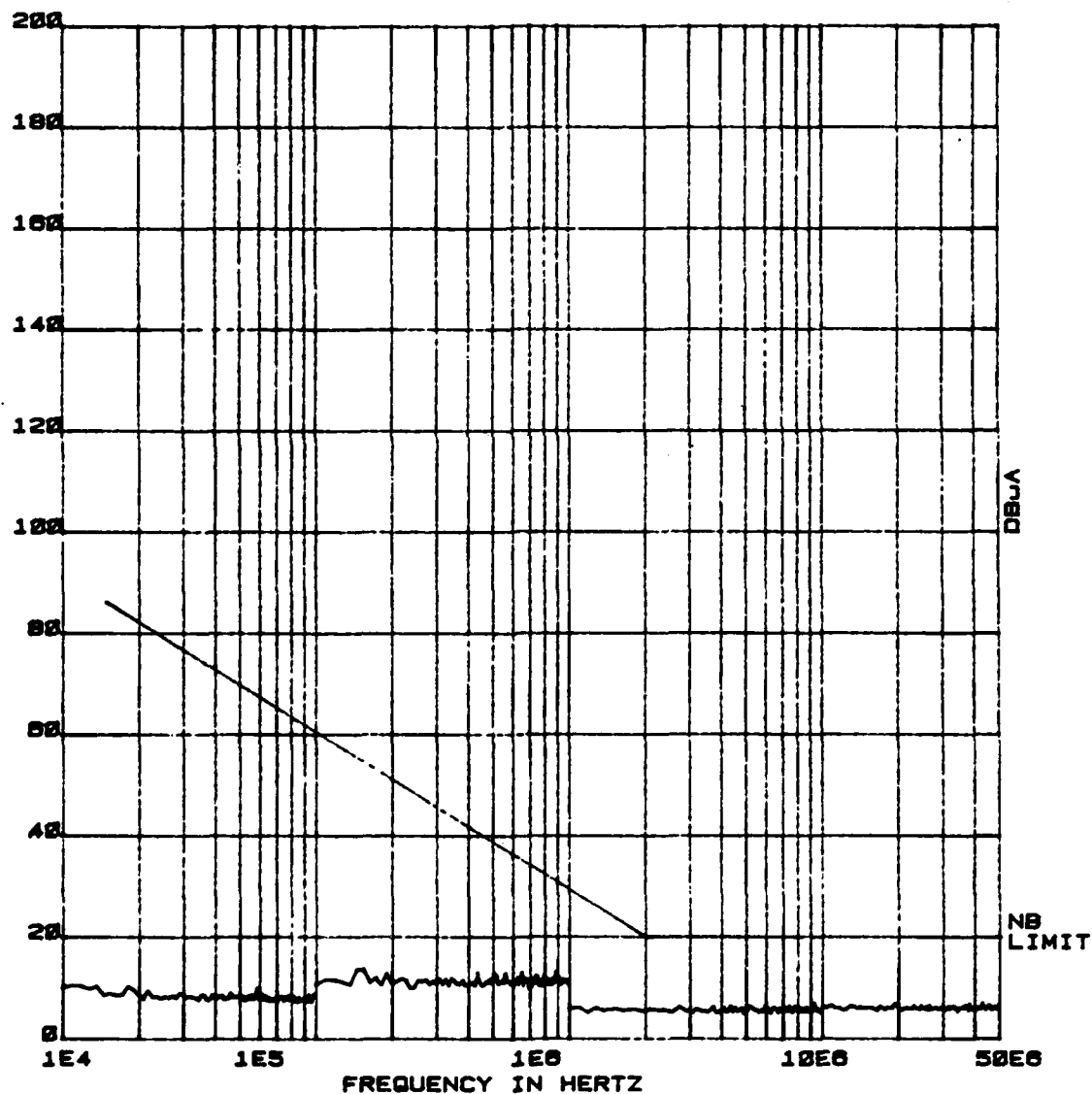


Figure 1. Conducted emissions NB data - Test No. CE03-1.

CONDUCTED EMISSIONS (15kHz-50MHz) BB DATA

SYSTEM NAME: ACTUATOR RIGGING TEST SET-ser# 0001
TEST DATE: 11/13/84
MICOM/DRSMI-RTS
NAME: BIRTHA HOOKS
TEST NUMBER: CE03--1
MODE: OPERATING
POLARIZATION:
TEST CONFIGURATION: SPOILER A

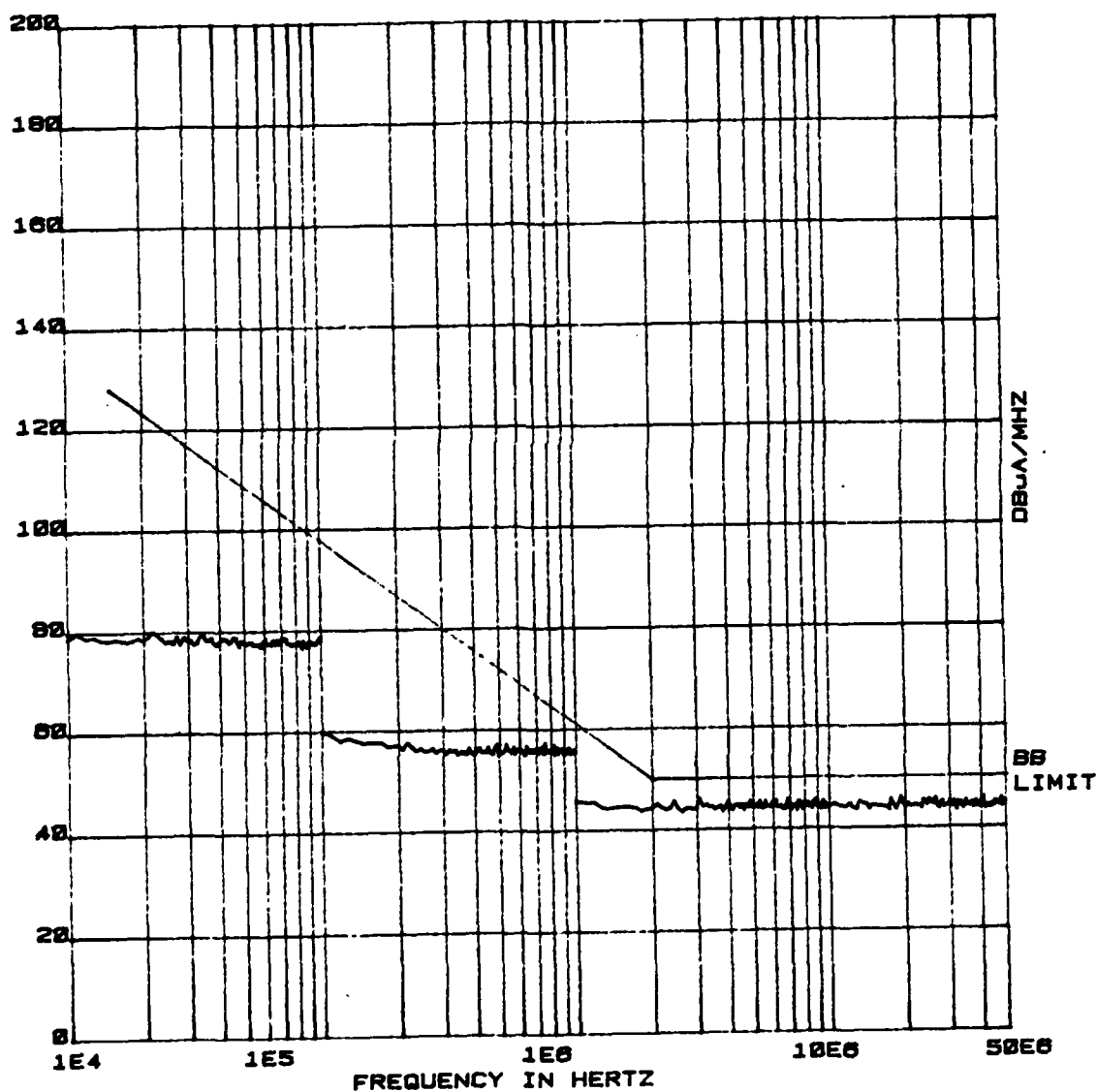


Figure 2. Conducted emissions BB data - Test No. CE03-1.

CONDUCTED EMISSIONS (15kHz-50MHz) NB DATA

SYSTEM NAME: ACTUATOR RIGGING TEST SET--ser#0001
TEST DATE: 11/13/84
MICOM/DRSMI-RTS
NAME: BIRTHA HOOKS
TEST NUMBER: CE03--2
MODE: OPERATING
POLARIZATION:
TEST CONFIGURATION: SPOILER B

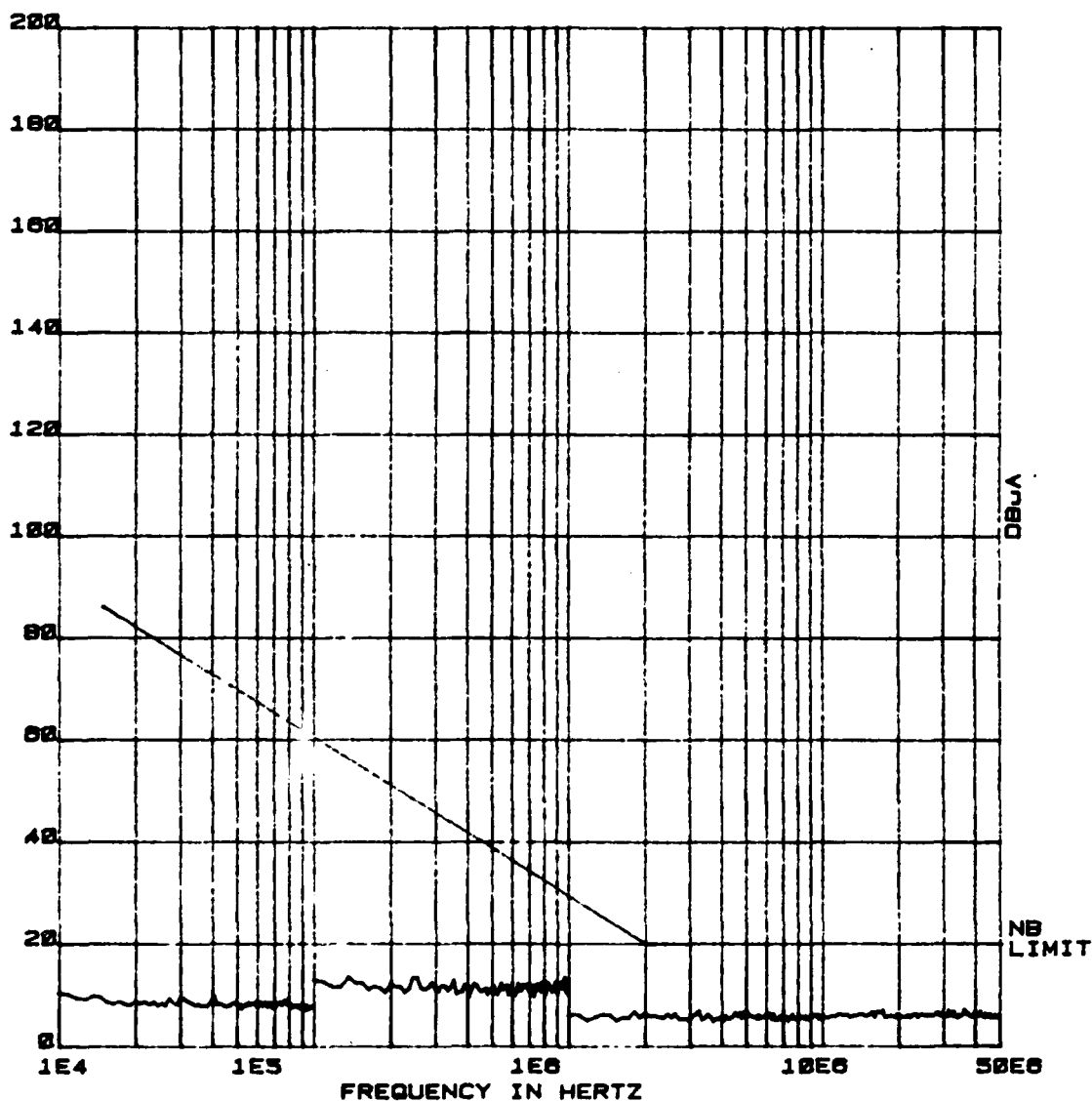


Figure 3. Conducted emissions NB data - Test No. CE03-2.

CONDUCTED EMISSIONS (15kHz-50MHz) BB DATA

SYSTEM NAME: ACTUATOR RIGGING TEST SET--ser#0001
TEST DATE: 11/13/84
MICON/DRSMI-RTS
NAME: BIRTHA HOOKS
TEST NUMBER: CE03--2
MODE: OPERATING
POLARIZATION:
TEST CONFIGURATION: SPOILER B

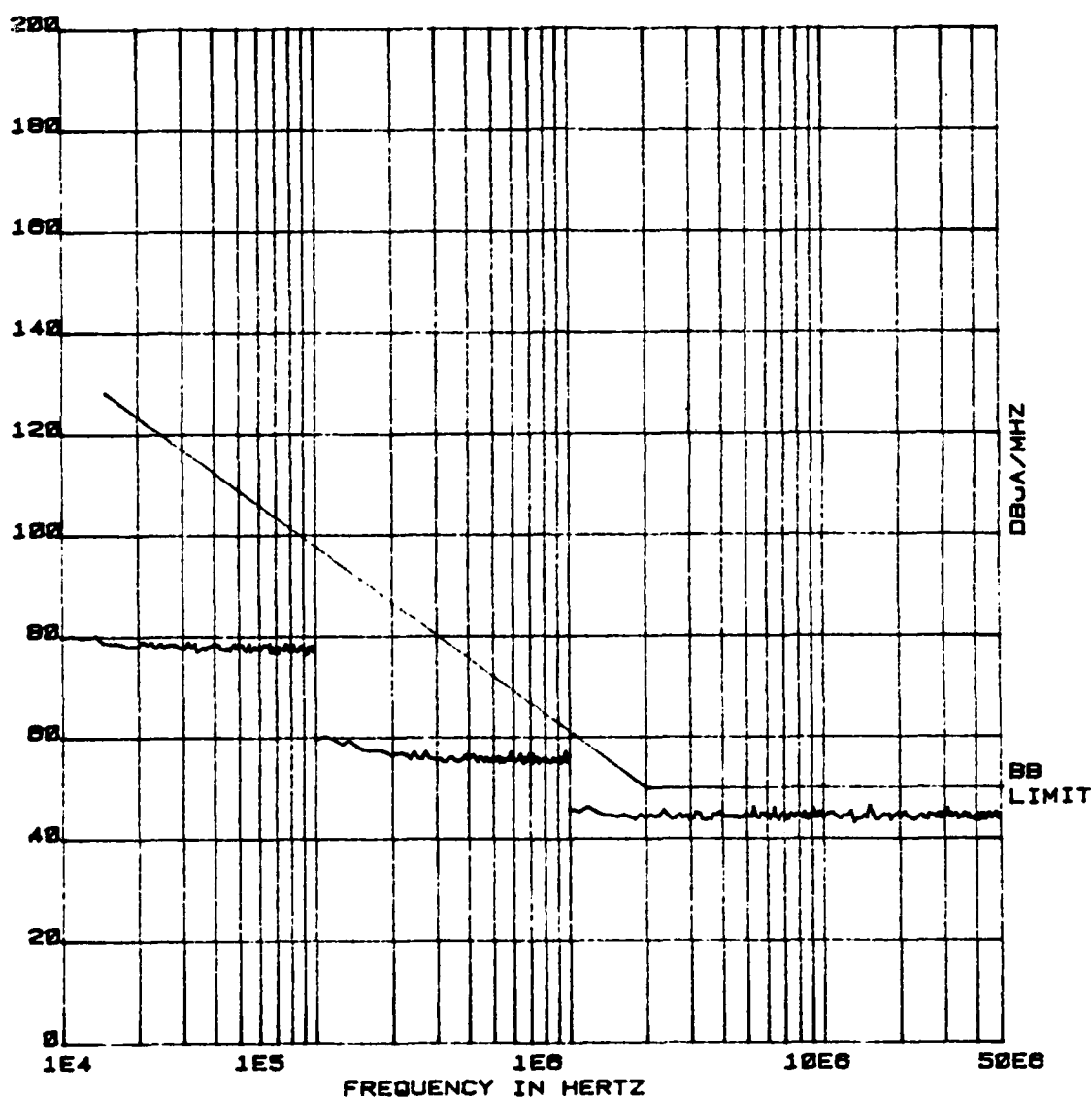


Figure 4. Conducted emissions BB data - Test No. CE03-2.

CONDUCTED EMISSIONS (15kHz-50MHz) BB DATA

SYSTEM NAME: ACTUATOR RIGGING TEST SET-ser#0001
TEST DATE: 11/19/84
MICOM/DRSMI-RTS
NAME: BIRTHA HOOKS
TEST NUMBER: CE03--3
MODE: OPERATING
POLARIZATION:
TEST CONFIGURATION: SPOILER C

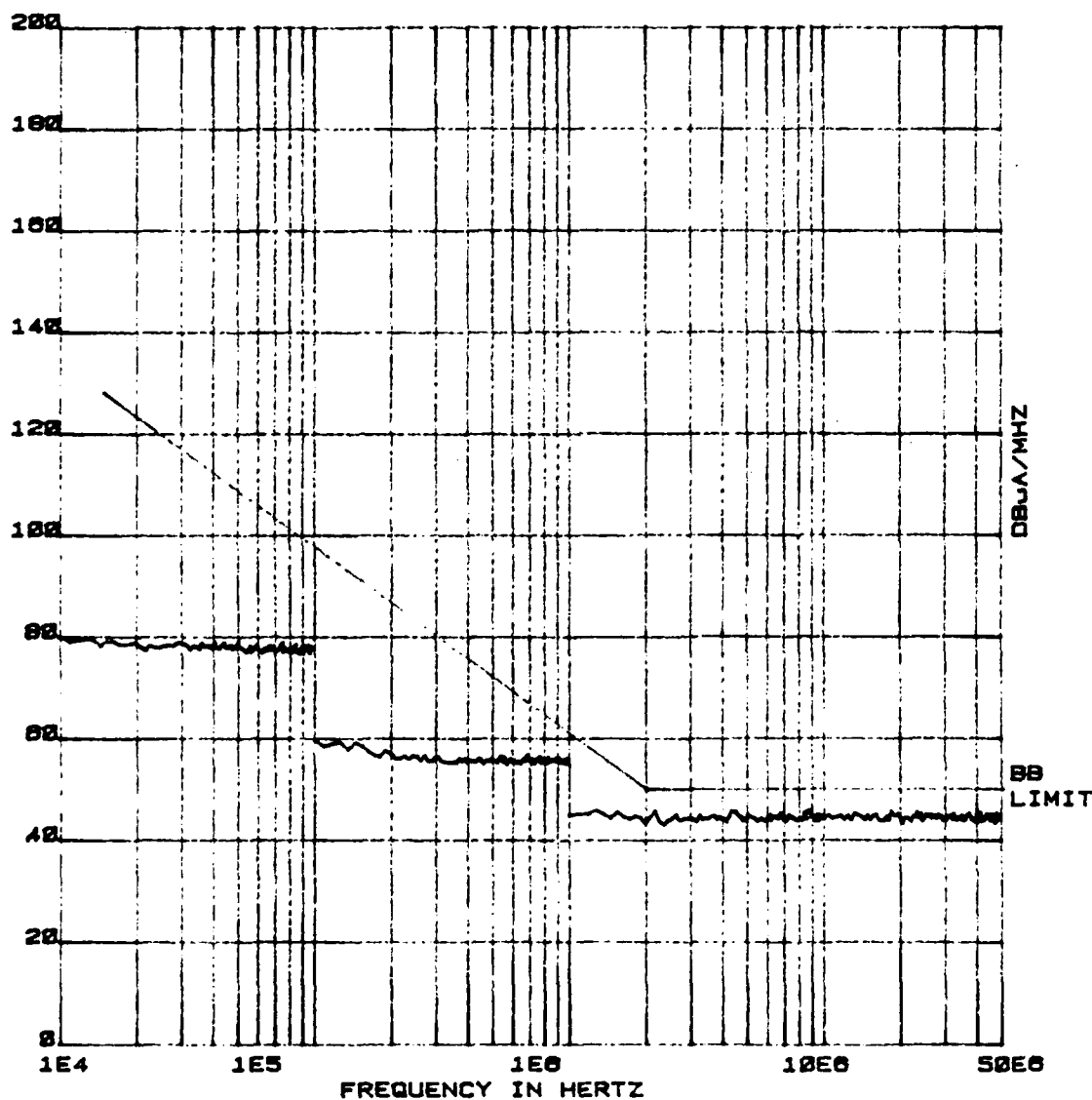


Figure 5. Conducted emissions BB data - Test No. CE03-3.

CONDUCTED EMISSIONS (15kHz-50MHz) NB DATA

SYSTEM NAME: ACTUATOR RIGGING TEST SET-ser#0001
TEST DATE: 11/13/84
MICOM/DRSMI-RTS
NAME: BIRTHA HOOKS
TEST NUMBER: CE03--10
MODE: OPERATING
POLARIZATION:
TEST CONFIGURATION: NEUTRAL PHASE POWER

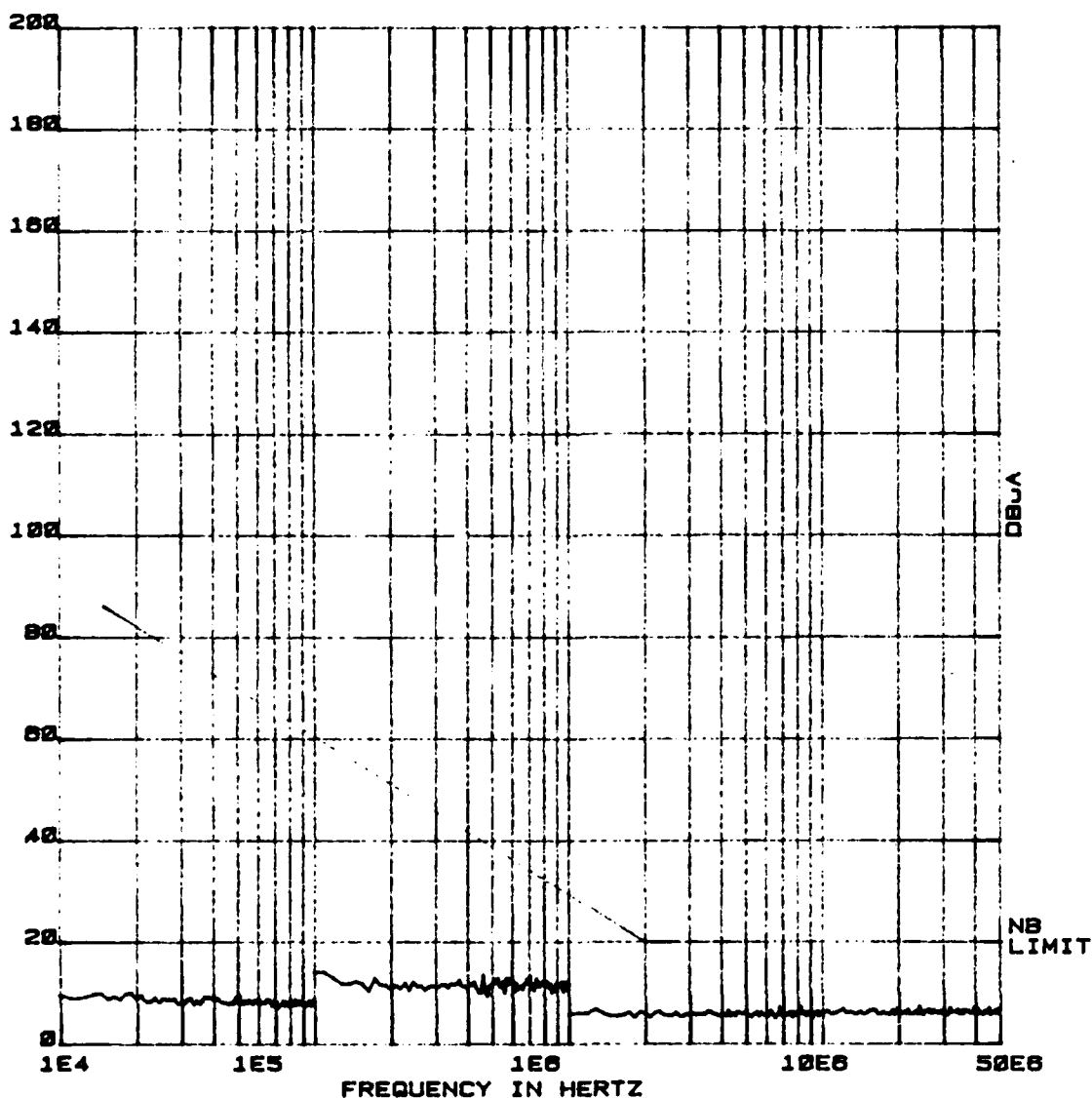


Figure 19. Conducted emissions NB data - Test No. CE03-10.

CONDUCTED EMISSIONS (15kHz-50MHz) BB DATA

SYSTEM NAME: ACTUATOR RIGGING TEST SET--ser#0001
TEST DATE: 11/13/84
MICOM/DRSMI-RTS
NAME: BIRTHA HOOKS
TEST NUMBER: CE03--9
MODE: OPERATING
POLARIZATION:
TEST CONFIGURATION: PHASE C POWER

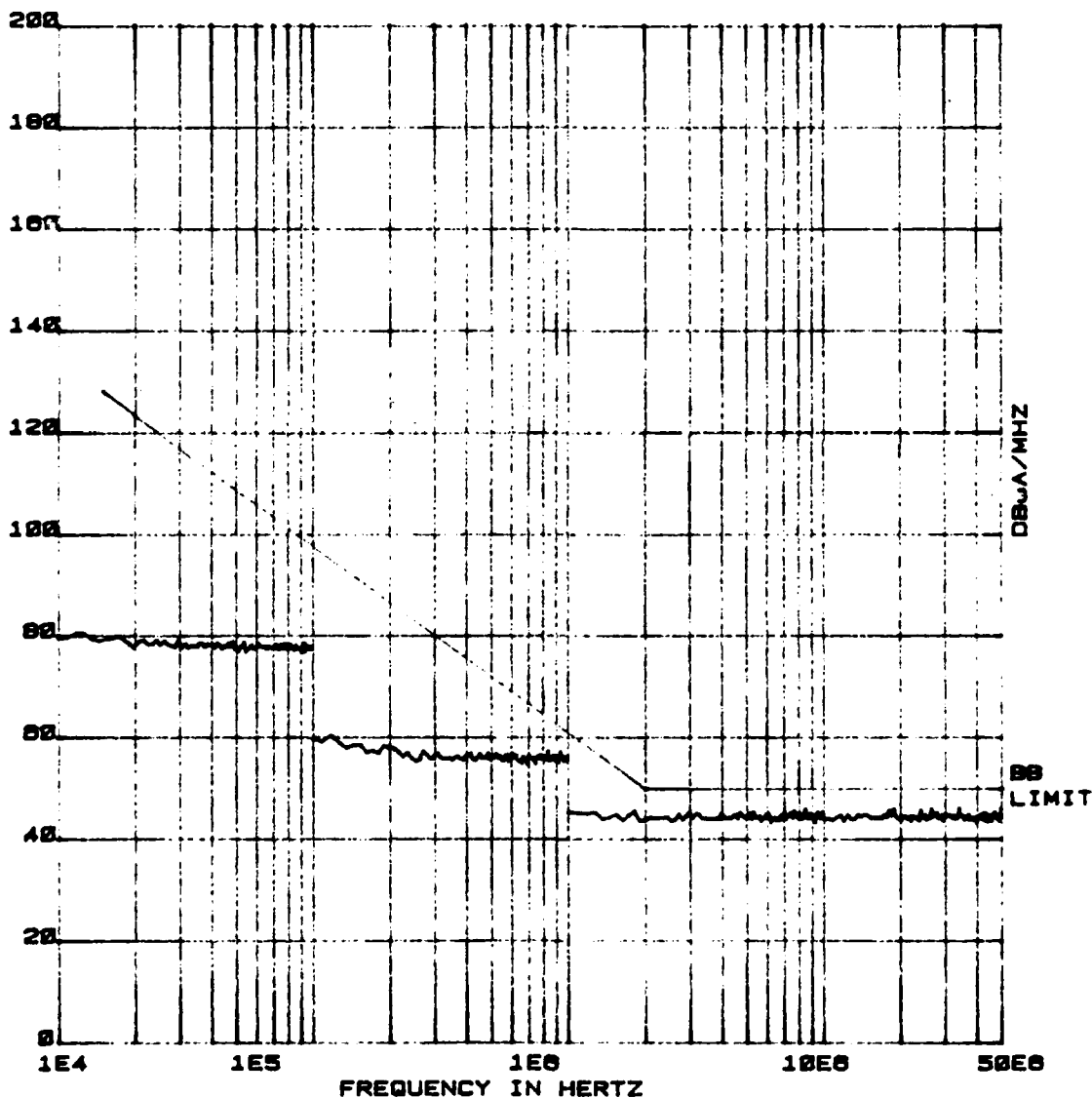


Figure 18. Conducted emissions BB data - Test No. CE03-9.

CONDUCTED EMISSIONS (15kHz-50MHz) NB DATA

SYSTEM NAME: ACTUATOR RIGGING TEST SET--ser#0001
TEST DATE: 11/13/84
MICON/DRSMI-RTS
NAME: BIRTHA HOOKS
TEST NUMBER: CE03--9
MODE: OPERATING
POLARIZATION:
TEST CONFIGURATION: PHASE C POWER

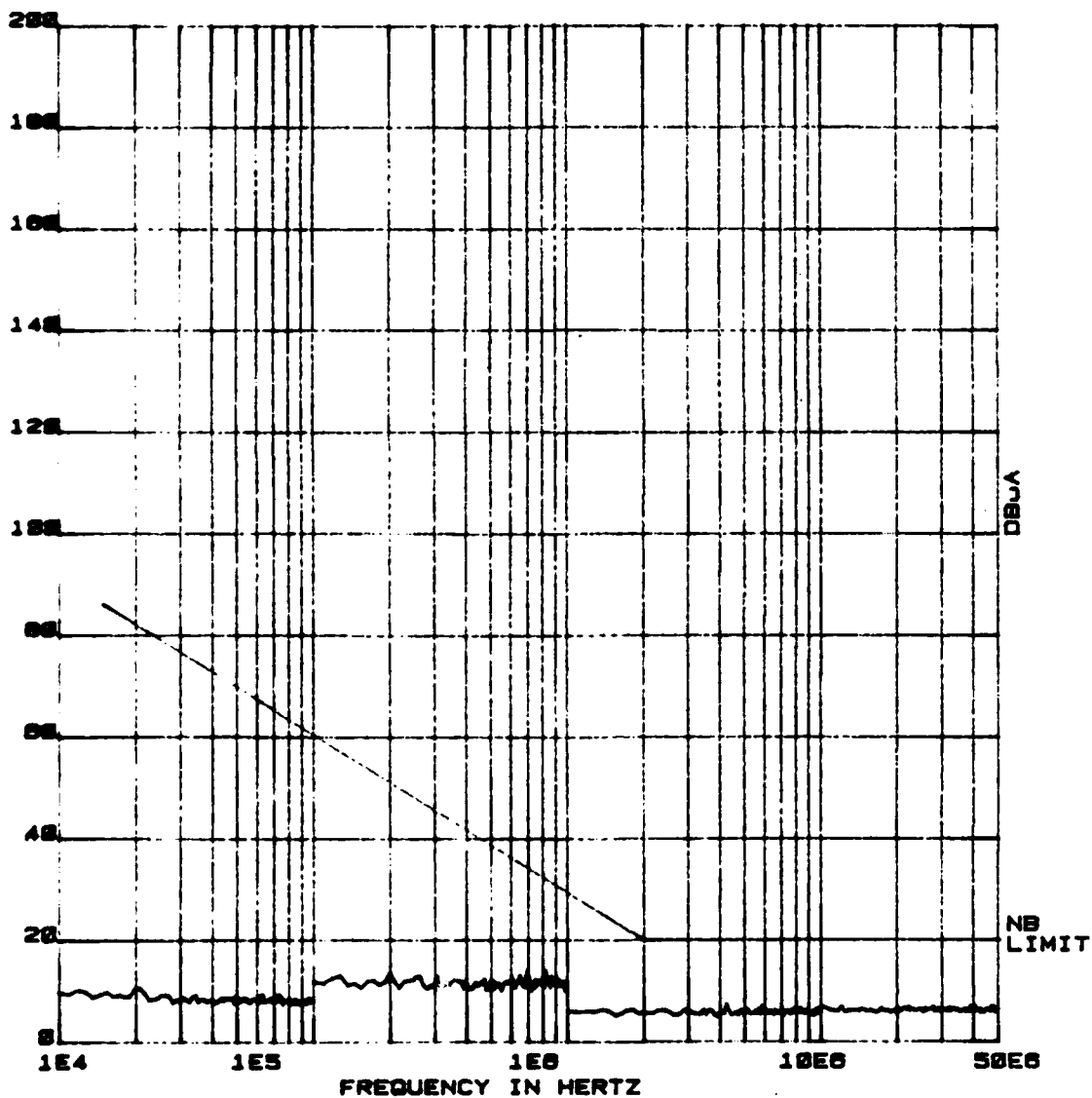


Figure 17. Conducted emissions NB data - Test No. CE03-9.

CONDUCTED EMISSIONS (15kHz-50MHz) NB DATA

SYSTEM NAME: ACTUATOR RIGGING TEST SET-ser#0001
TEST DATE: 11/13/84
MICON/DRSMI-RTS
NAME: BIRTHA HOOKS
TEST NUMBER: CE03-8
MODE: OPERATING
POLARIZATION:
TEST CONFIGURATION: PHASE B POWER

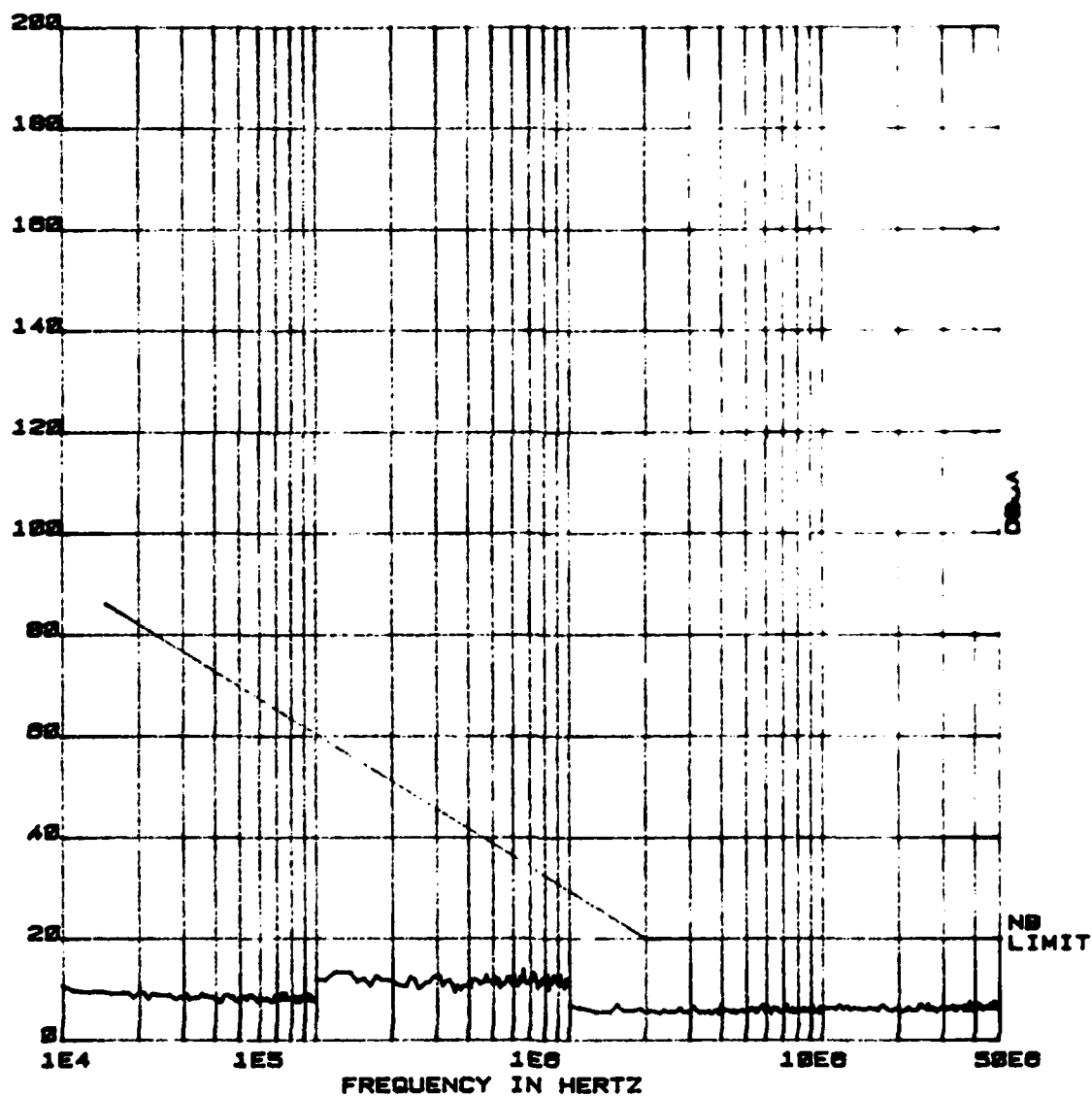


Figure 16. Conducted emissions NB data - Test No. CE03-8.

CONDUCTED EMISSIONS (15kHz-50MHz) BB DATA

SYSTEM NAME: ACTUATOR RIGGING TEST SET-ser#8001
TEST DATE: 11/13/94
MICOM/DRSMI-RTS
NAME: BIRTHA HOOKS
TEST NUMBER: CE03-8
MODE: OPERATING
POLARIZATION:
TEST CONFIGURATION: PHASE B POWER

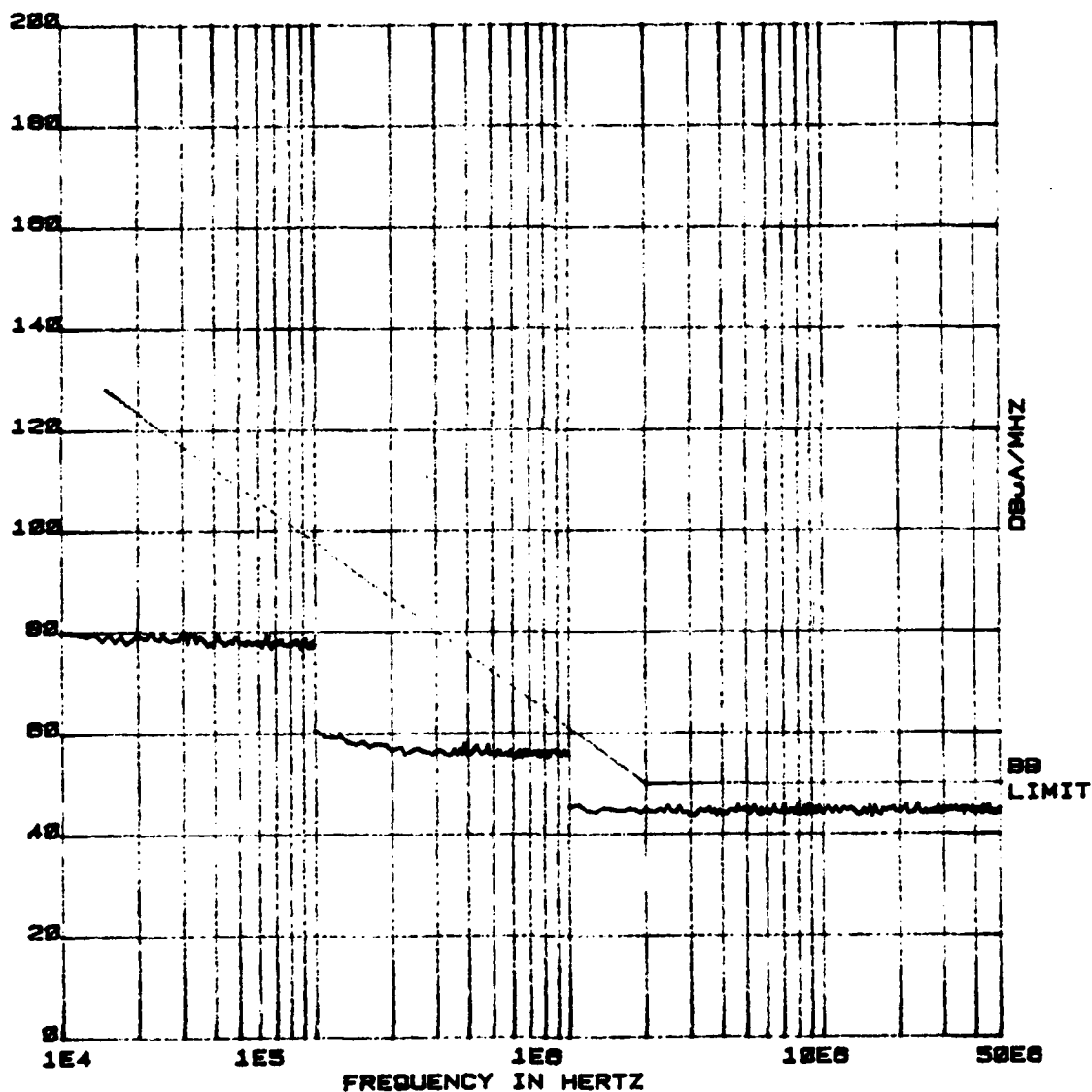


Figure 15. Conducted emissions BB data - Test No. CE03-8.

CONDUCTED EMISSIONS (15kHz-50MHz) NB DATA

SYSTEM NAME: ACUTATOR RIGGING TEST SET--ser#0001
TEST DATE: 11/13/84
MICOM/DRSMI-RTS
NAME: BIRTHA HOOKS
TEST NUMBER: CE03--7
MODE: OPERATING
POLARIZATION:
TEST CONFIGURATION: PHASE A POWER

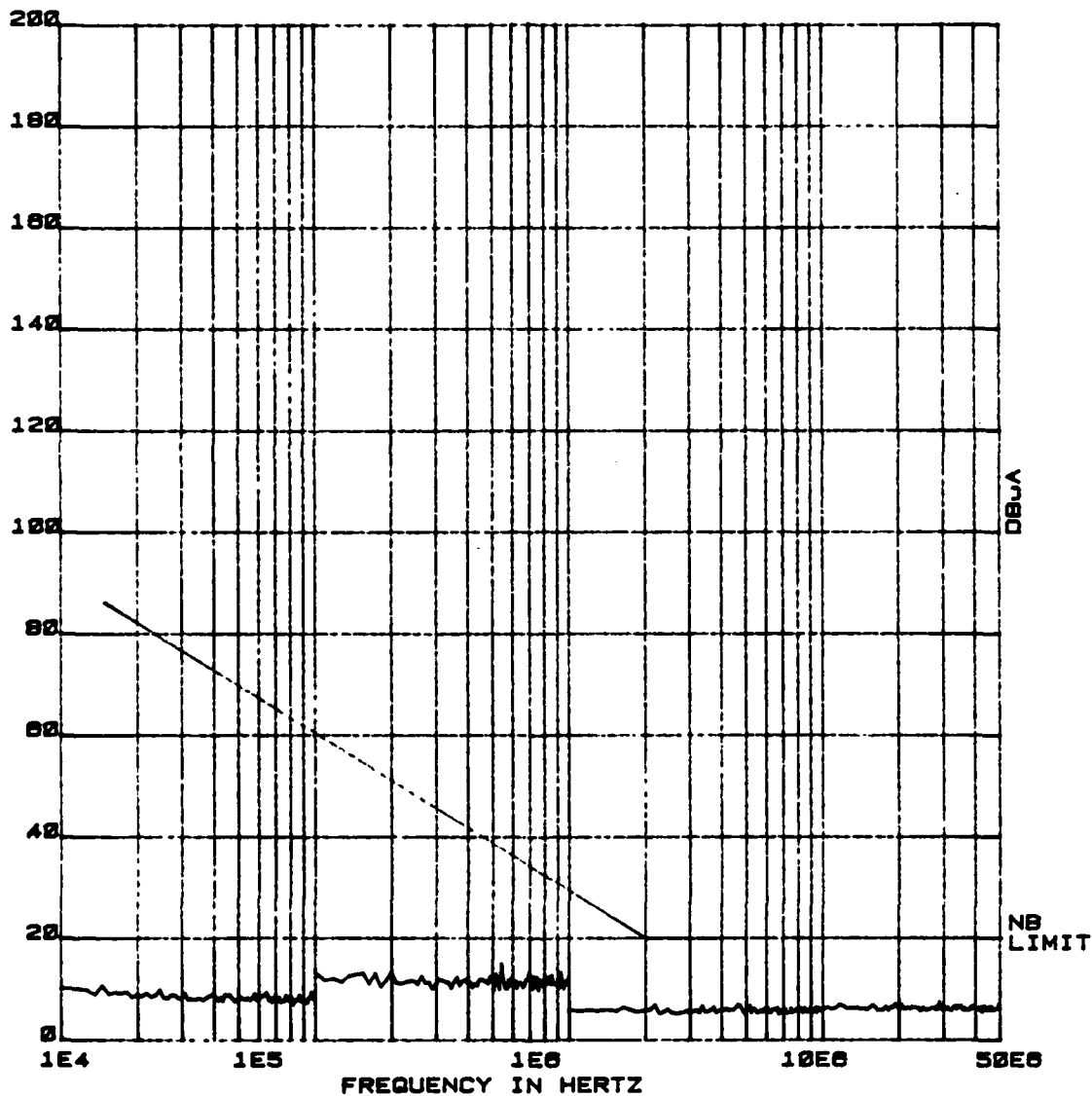


Figure 14. Conducted emissions NB data - Test No. CE03-7.

CONDUCTED EMISSIONS (15kHz-50MHz) BB DATA

SYSTEM NAME: ACUTATOR RIGGING TEST SET--ser#0001
TEST DATE: 11/13/84
MICOM/DRSMI-RTS
NAME: BIRTHA HOOKS
TEST NUMBER: CE03--7
MODE: OPERATING
POLARIZATION:
TEST CONFIGURATION: PHASE A POWER

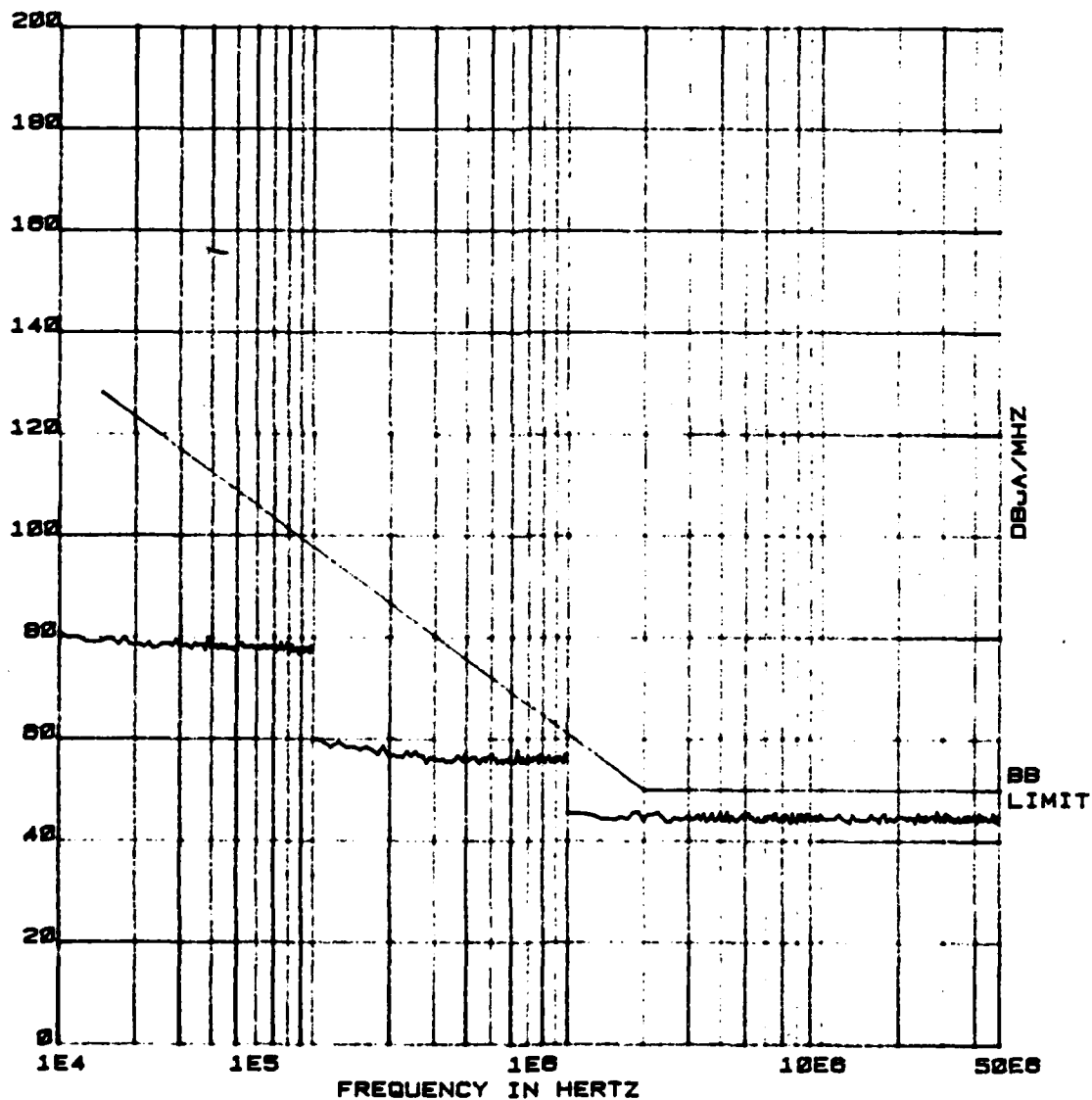


Figure 13. Conducted emissions BB data - Test No. CE03-7.

CONDUCTED EMISSIONS (15kHz-50MHz) NB DATA

SYSTEM NAME: ACTUATOR RIGGING TEST SET-0001
TEST DATE: 11/13/84
MICOM/DRSMI-RTS
NAME: BIRTHA HOOKS
TEST NUMBER: CE03--6
MODE: AMBIENT
POLARIZATION:
TEST CONFIGURATION: SPOILER B (bundle)

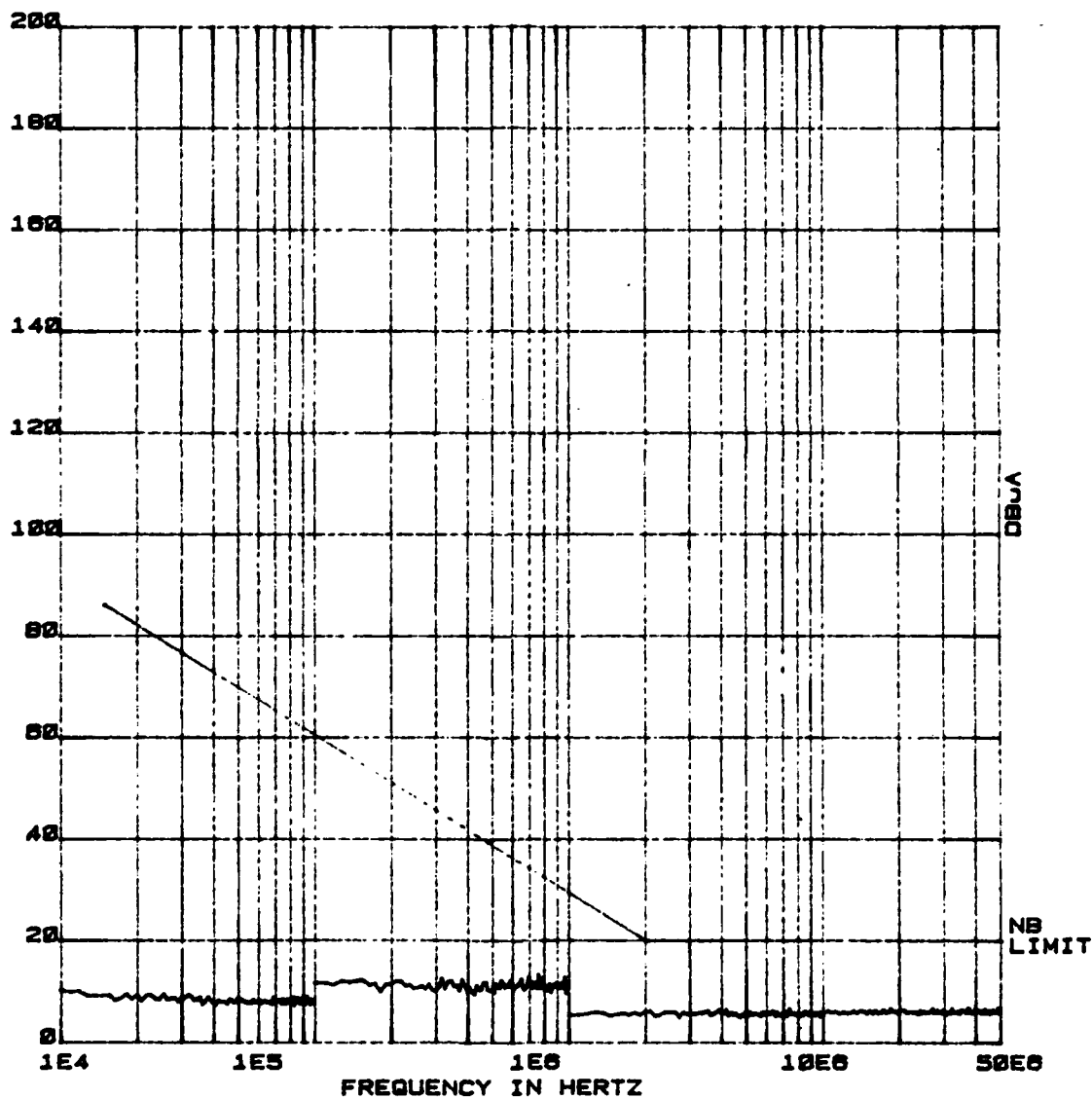


Figure 12. Conducted emissions NB data - Test No. CE03-6.

CONDUCTED EMISSIONS (15kHz-50MHz) BB DATA

SYSTEM NAME: ACTUATOR RIGGING TEST SET-0001
TEST DATE: 11/13/84
MICOM/DRSMI-RTS
NAME: BIRTHA HOOKS
TEST NUMBER: CE03--6
MODE: AMBIENT
POLARIZATION:
TEST CONFIGURATION: SPOILER B (bundle)

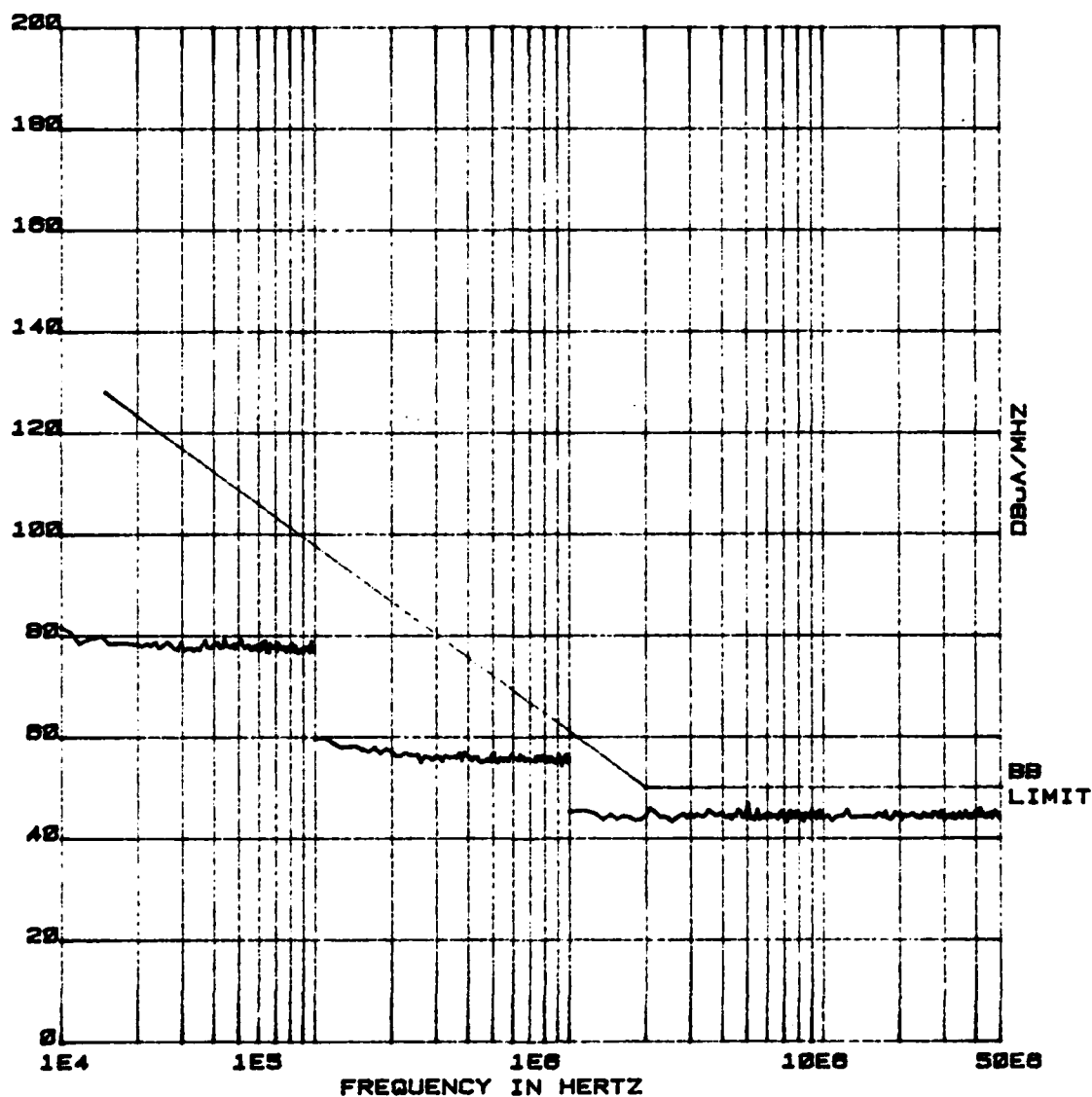


Figure 11. Conducted emissions BB data - Test No. CE03-6.

CONDUCTED EMISSIONS (15kHz-50MHz) NB DATA

SYSTEM NAME: ACTUATOR RIGGING TEST SET -ser#2001
TEST DATE: 11/18/84
MICON/DRSMI-RTS
NAME: BIRTHA HOOKS
TEST NUMBER: CE03-5
MODE: OPERATING
POLARIZATION:
TEST CONFIGURATION: SHAKER 2

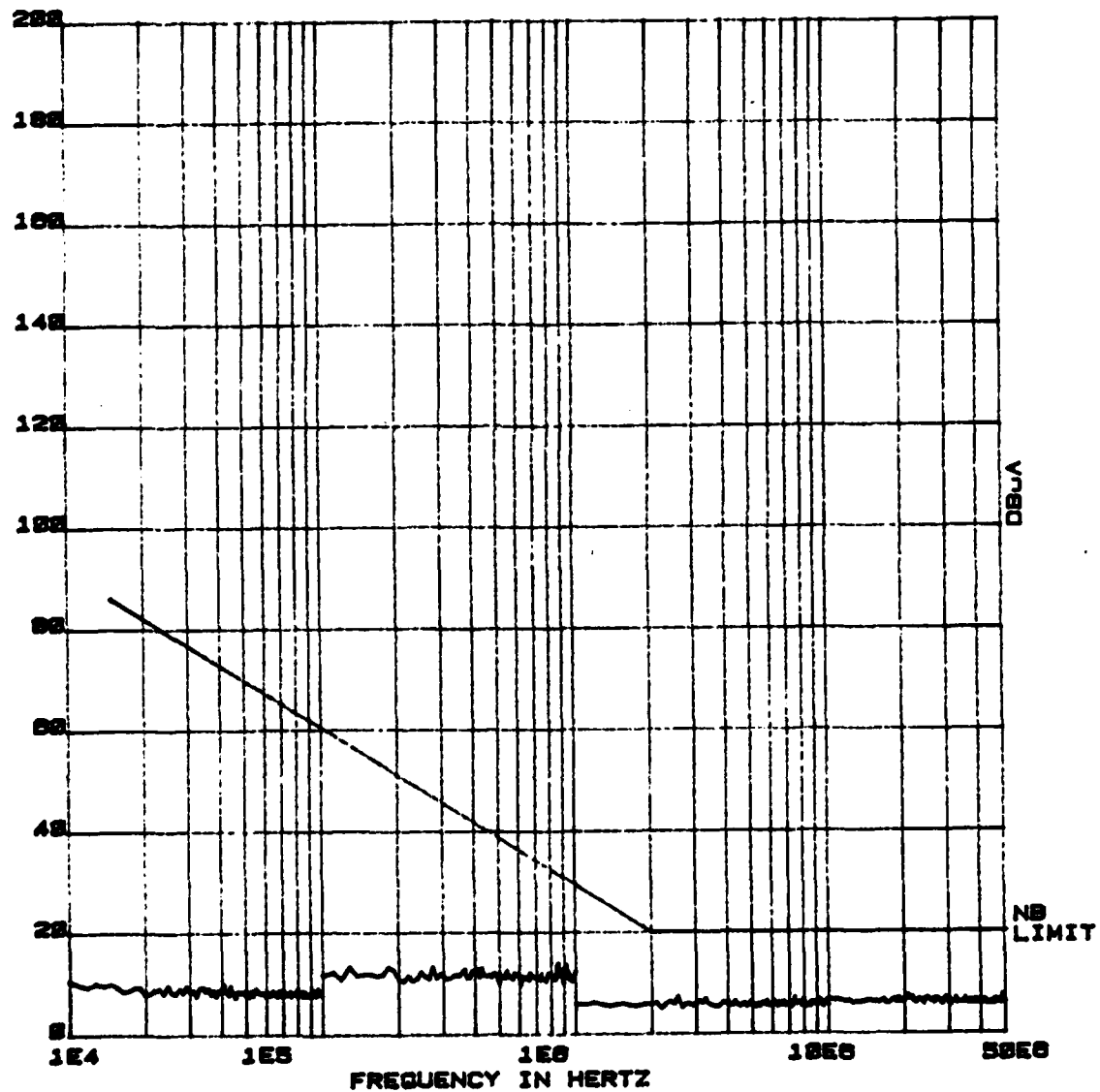


Figure 10. Conducted emissions NB data - Test No. CE03-5.

CONDUCTED EMISSIONS (15kHz-50MHz) BB DATA

SYSTEM NAME: ACTUATOR RIGGING TEST SET -ser#0001
TEST DATE: 11/19/84
MICON/DRSMI-RTS
NAME: BIRTHA HOOKS
TEST NUMBER: CE03-5
MODE: OPERATING
POLARIZATION:
TEST CONFIGURATION: SHAKER 2

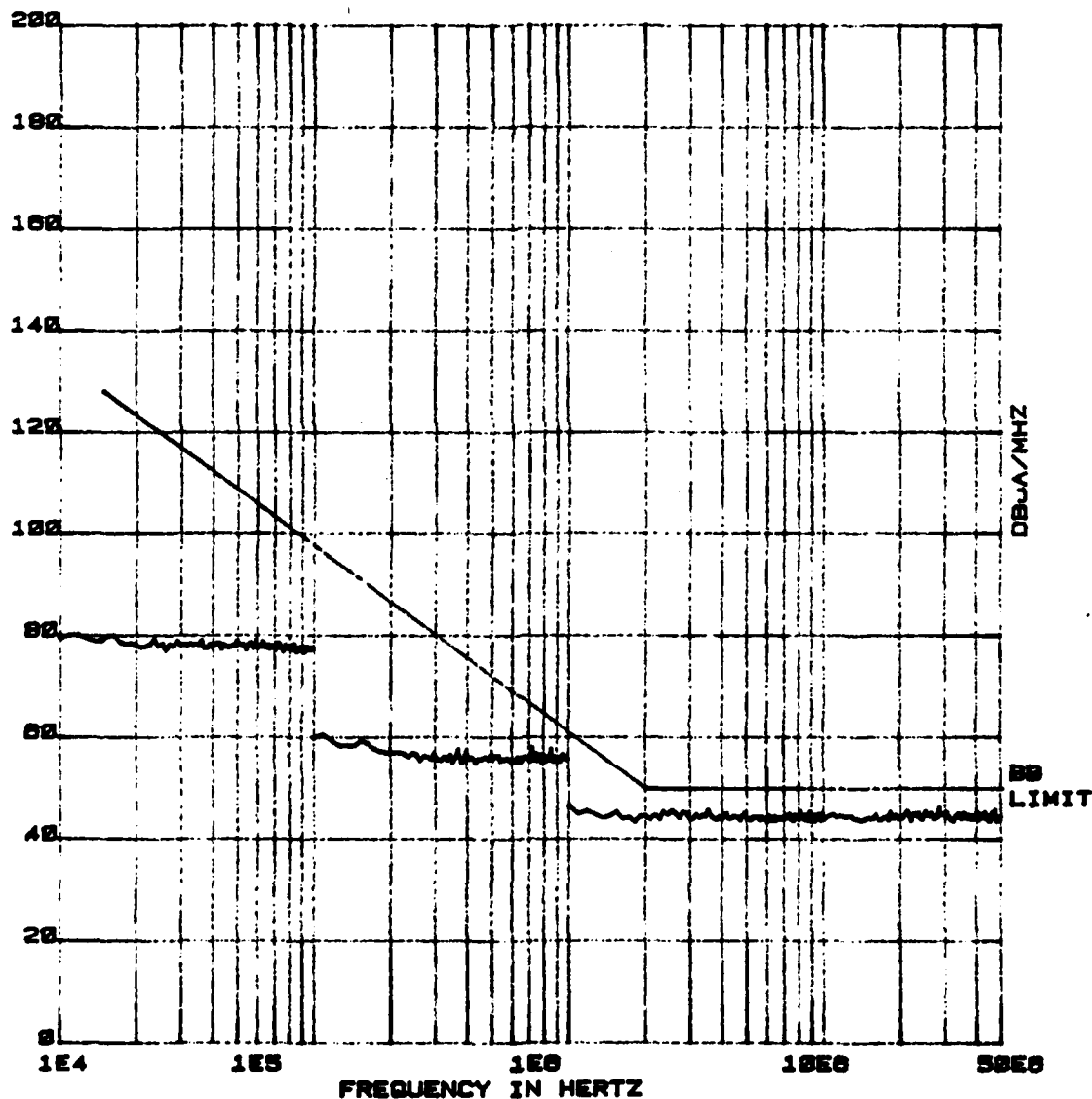


Figure 9. Conducted emissions BB data - Test No. CE03-5.

CONDUCTED EMISSIONS (15kHz-50MHz) NB DATA

SYSTEM NAME: ACTUATOR RIGGING TEST SET-ser#0001
TEST DATE: 11/13/84
MICON/DRSMI-RTS
NAME: BIRTHA HOOKS
TEST NUMBER: CE03-4
MODE: OPERATING
POLARIZATION:
TEST CONFIGURATION: SHAKER 1

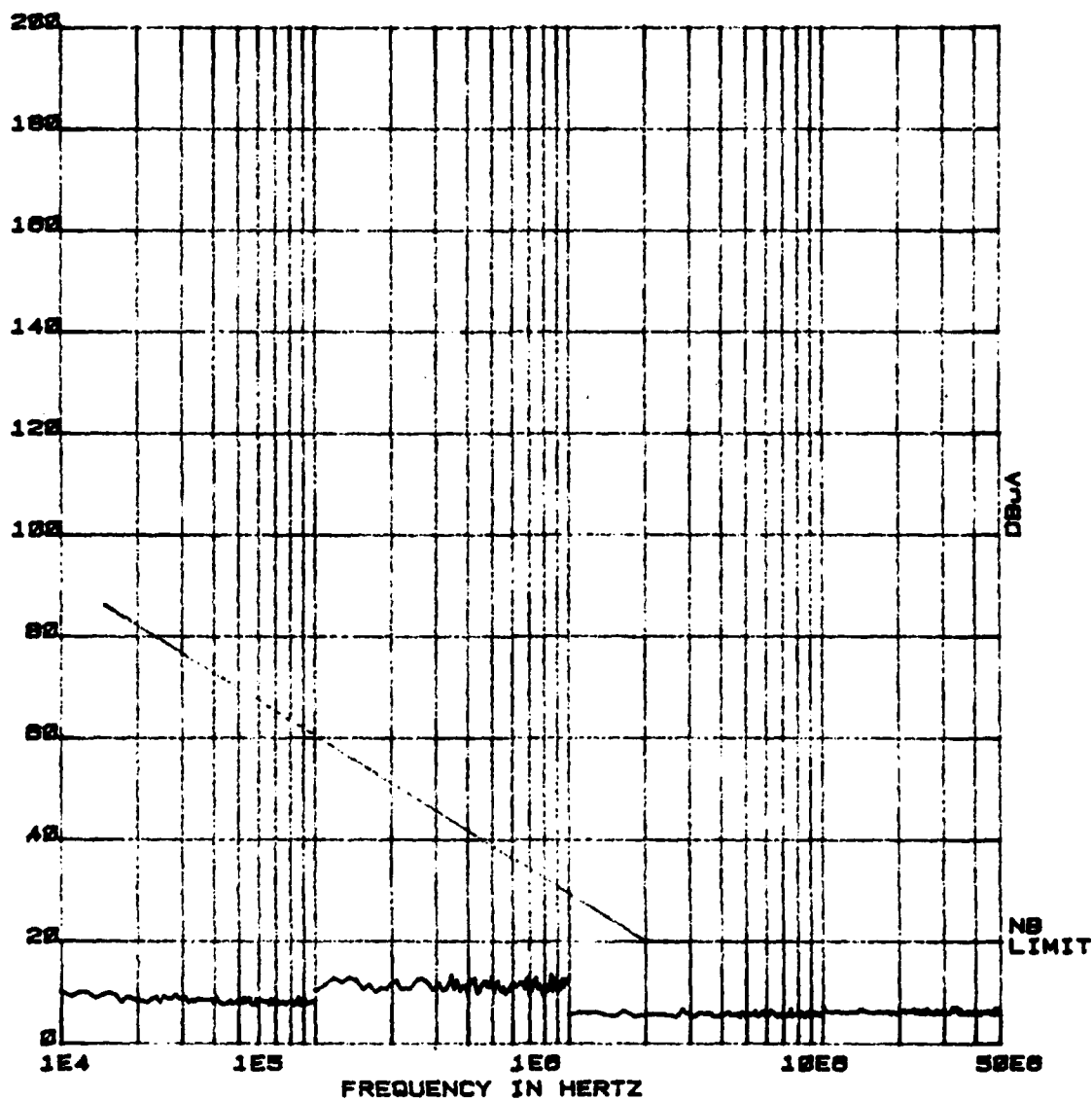


Figure 8. Conducted emissions NB data - Test No. CE03-4.

CONDUCTED EMISSIONS (15kHz-50MHz) BB DATA

SYSTEM NAME: ACTUATOR RIGGING TEST SET-ser#0001
TEST DATE: 11/19/84
MICOM/DRSMI-RTS
NAME: BIRTHA HOOKS
TEST NUMBER: CE03--4
MODE: OPERATING
POLARIZATION:
TEST CONFIGURATION: SHAKER 1

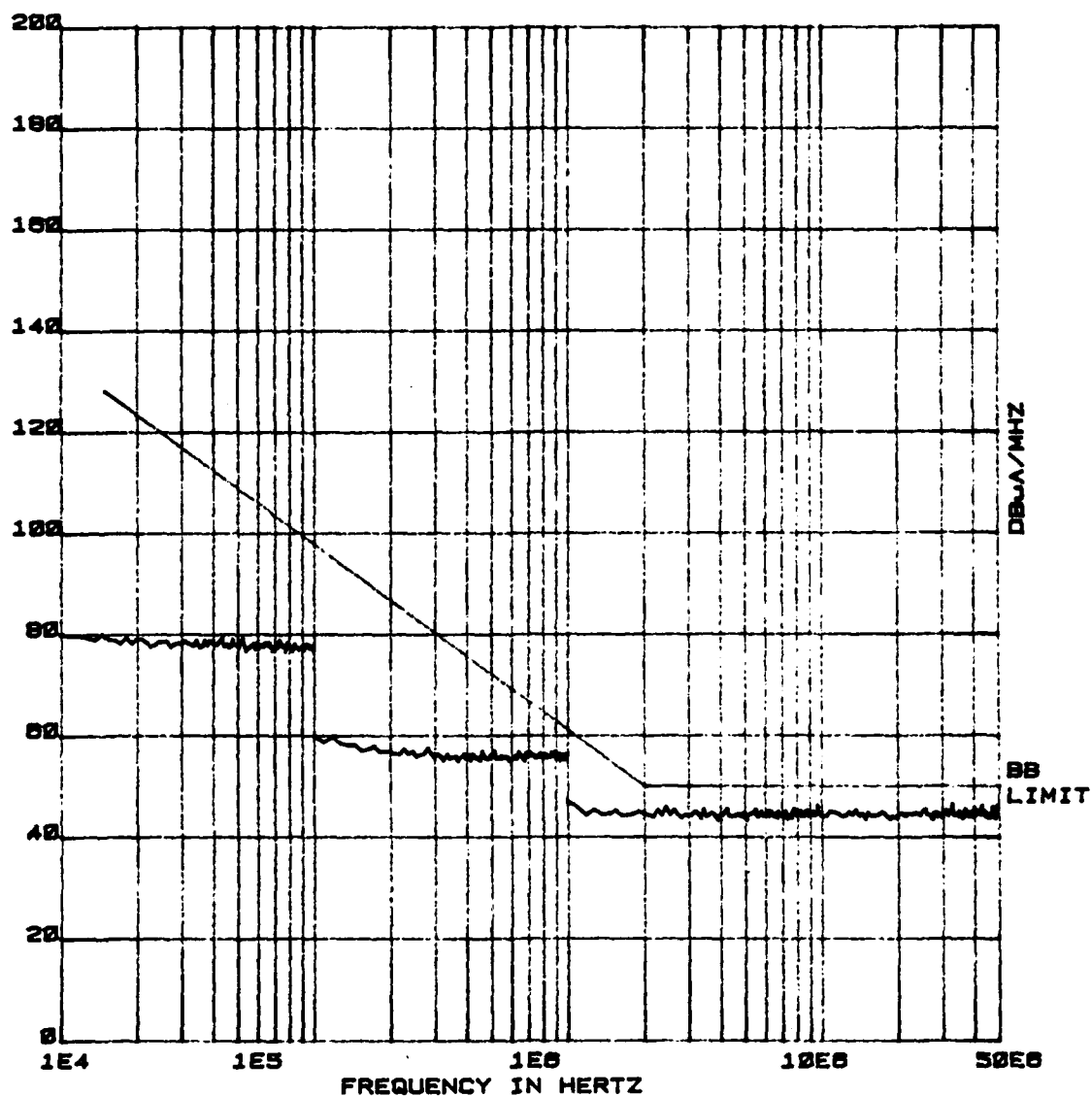


Figure 7. Conducted emissions BB data - Test No. CE03-4.

CONDUCTED EMISSIONS (15kHz-50MHz) NB DATA

SYSTEM NAME: ACTUATOR RIGGING TEST SET-ser#0001
TEST DATE: 11/19/84
MICOM/DRSMI-RTS
NAME: BIRTHA HOOKS
TEST NUMBER: CE03--3
MODE: OPERATING
POLARIZATION:
TEST CONFIGURATION: SPOILER C

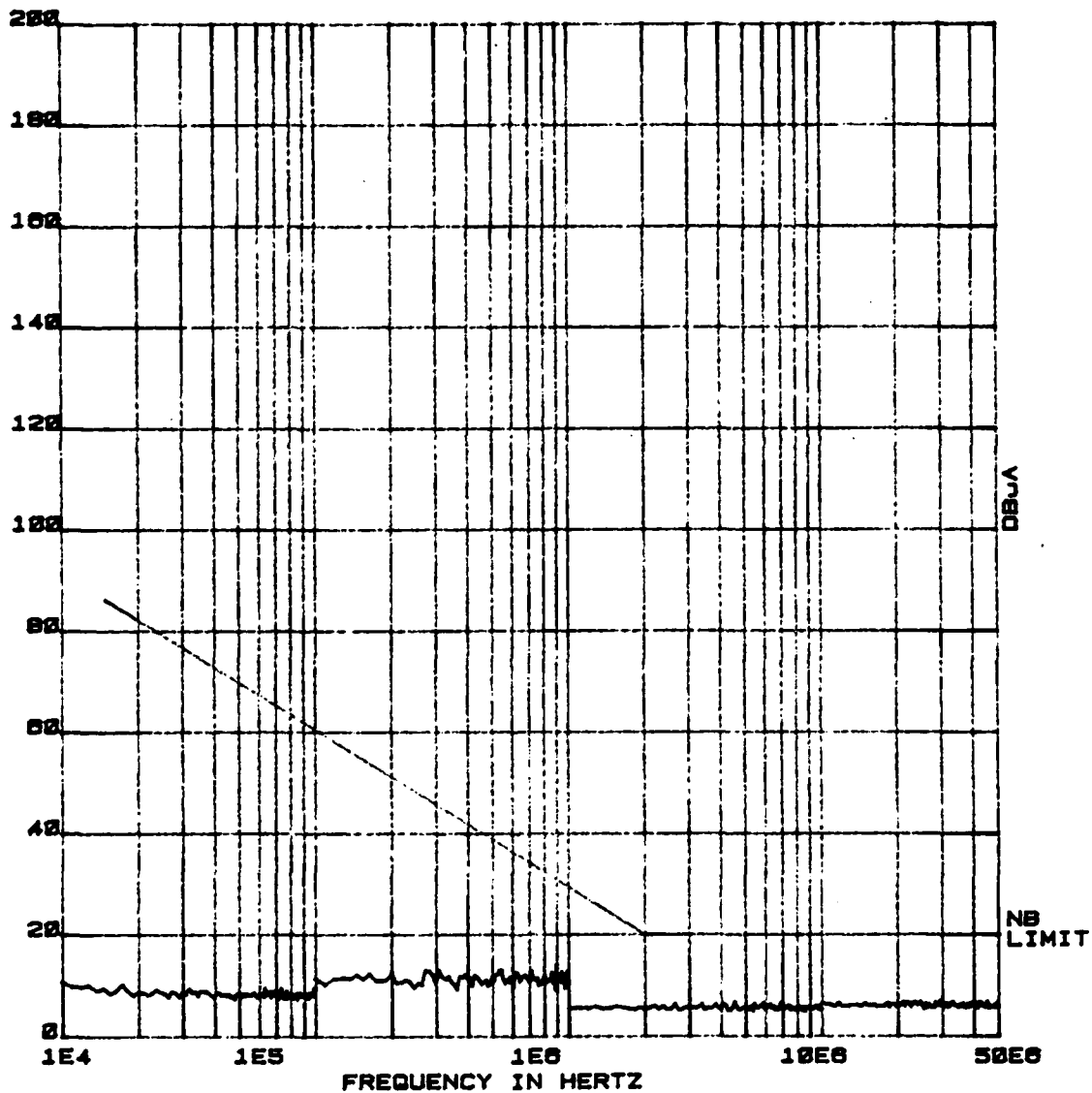


Figure 6. Conducted emissions NB data - Test No. CE03-3.

CONDUCTED EMISSIONS (15kHz-50MHz) BB DATA

SYSTEM NAME: ACTUATOR RIGGING TEST SET-ser#0001
TEST DATE: 11/13/84
MICON/DRSMI-RTS
NAME: BIRTHA HOOKS
TEST NUMBER: CE03--10
MODE: OPERATING
POLARIZATION:
TEST CONFIGURATION: NEUTRAL PHASE POWER

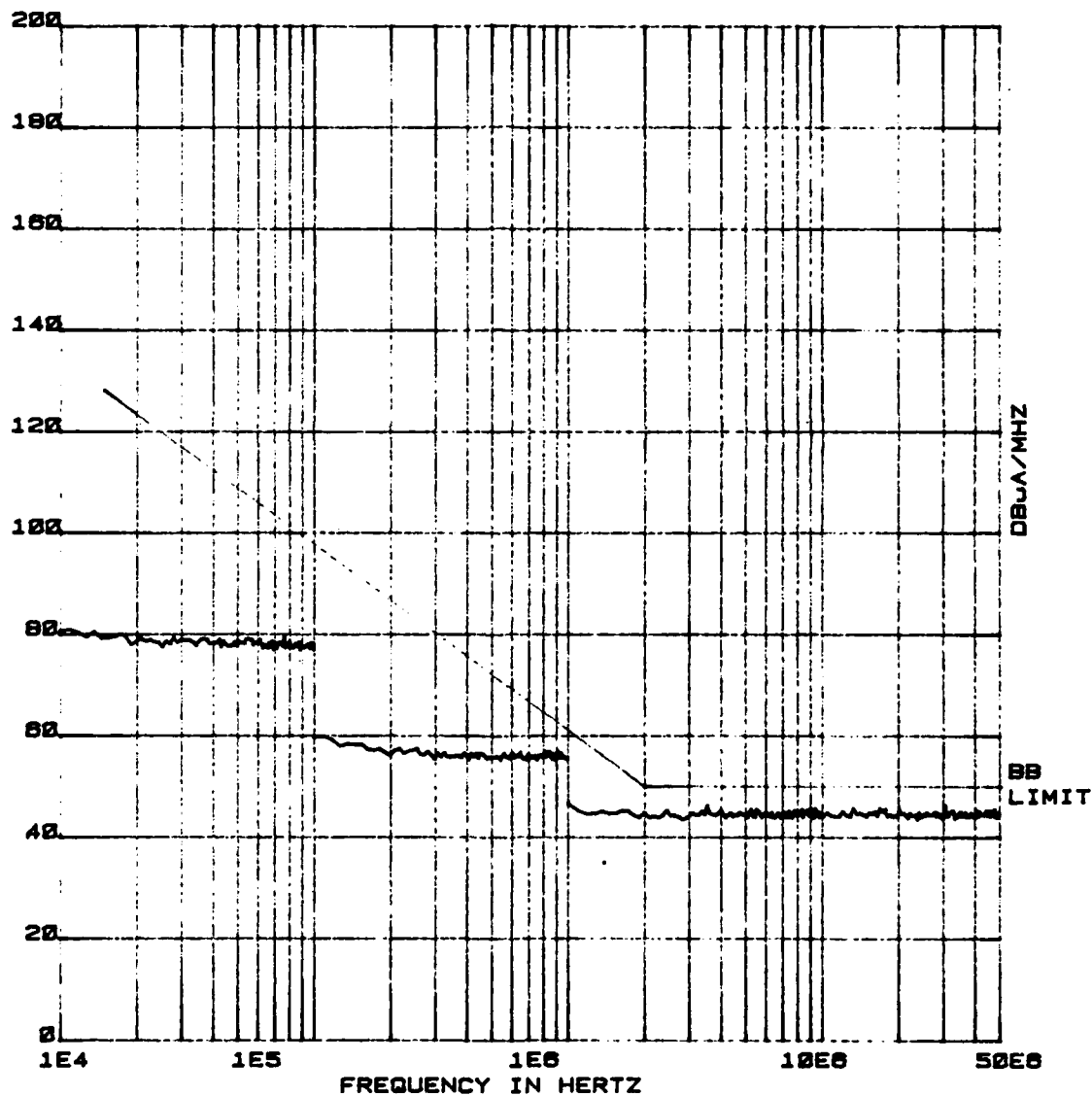


Figure 20. Conducted emissions BB data - Test No. CE03-10.

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